54

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
APPIAH, CHARLES NANA	
ART UNIT	**PAPER NUMBER**
2686	

DATE MAILED: 06/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/092,048	KUEHNEL ET AL.	
	Examiner	Art Unit	
	Charles Appiah	2686	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 February 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on February 3, 2005 have been fully considered but they are not persuasive.

In response to Applicants' argument that "Nelson and Funk fail to teach, suggest or enable, a radio module within an interface that allows the radio to be positioned within the wireless network, to improve an antenna performance for example, without fixing or dictating the location of the host device", examiner maintains that contrary to applicants' assertion, in both Nelson and Funk, the location of the host device is not determined by the location or position of the antenna, rather the position of the antenna provides optimized reception and transmission of wireless signals within the network. Clearly, optimizing transmission and reception of wireless signals based on antenna position does not fix the host device's location. Nelson therefore still meets applicants' invention in the claims as amended. The rejections as set forth below are made FINAL.

Claim Rejections - 35 USC § 102

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-3, 8,10, 11 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Bass, Snr. (5,896,574).

Regarding claim 1, Bass discloses as illustrated in Fig. 1- 2, a radio module (210), for use by one or more devices in a wireless network, wherein performance of the

radio module varies based on the position of the radio module within the wireless network, the radio module comprising: an antenna module that includes an antenna and is an integral part of the radio module (213), a baseband module that performs demodulation and decoding on signals received over the antenna module and that performs modulation and coding on signals transmitted by the antenna module (baseband card being connected the radio module, see col. 3, lines 43-60), an interface circuit that provides an interface between the baseband module, the antenna module (battery housing providing mating interface of radio module to connect to the baseband card via connector or cabling, see col. 3, lines 65-67), and a host device (201), and a physical interface that detachably connects the radio module with the host device such that the radio module may be positioned within the wireless network without fixing the host device (as can be seen in Fig. 2, the Y cable 211 allows connection of the radio module to the host device 201 without fixing the host devices, location).

Regarding claim 2, Bass further discloses wherein the antenna module receives power from the host device through the physical interface (radio module being is supplied power from both the PCMCIA cards via the Y cable, see col. 4, lines 15-22).

Regarding claim 3, Bass further discloses wherein the interface circuit further comprises a host interface (see PCMCIA card adapter 205, Fig. 2).

Regarding claim 8, Bass further discloses wherein the physical interface comprises a cable that permits the radio module to be optimally positioned within the wireless network (see cable 211, Fig. 2).

Regarding claim 10, Bass discloses a module (209) for use with each wireless device in a wireless network such that communication occurs between the wireless devices over the wireless network , wherein the radio module's performance depends on the radio module's position within the wireless network (Fig. 2 shows the radio module can be optimally positioned in the wireless network), the radio module comprising: an antenna module that includes an antenna (213) and is an integral part of the radio module (radio module being shown with antenna, see col. 4, lines 17-18), an interface circuit for logically connecting the antenna module with a host device, wherein the interface circuit includes a baseband module that demodulates and decodes signals received over the antenna module and that modulates and encodes signals transmitted through the antenna module (battery housing providing mating interface of radio module to connect to the baseband card via connector or cabling, see col. 3, lines 65-67), a physical interface (205, 207) for detachably connecting the radio module with the host device (see col. 4, lines 13-15), and a cable (Y cable 211), that supports the logical connection between the interface circuit and the host device through the physical interface, wherein the cable permits the radio module to be flexibly positioned within the wireless network without dictating the host device's location (as can be seen in Fig. 2, the Y cable 211 allows connection of the radio module to the host device 201 without dictating the host device's, location).

Regarding claim 11, Bass further discloses wherein the antenna module receives power from the host device through the physical interface (radio module being is supplied power from both the PCMCIA cards via the Y cable, see col. 4, lines 15-22).

4. Claim 1, 3, 4, 6, 8 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by **Nelson et al. (6,377,218).**

Regarding claim 1, Nelson discloses a radio module for use by one or more devices in a wireless network, wherein the performance of the radio module varies based on the position of the radio module within the wireless network (feature of antenna being at an optimum angle to allow optimization wireless transmission and reception, see col. 5, lines 34-49), the radio module comprising: an antenna module (200) that is an integral part of the radio module (200), a baseband module that performs demodulation and decoding on signals received over the antenna module and that modulates and encodes signals transmitted through the antenna module (see col. 4, lines 51-55), an interface circuit (210, 220, 230 and 240) that provides an interface between the baseband module, the antenna module and a host device (see col. 4, lines 51-55), and a physical interface (100) that detachably connects the radio module with the host device such that the radio module may be positioned within the wireless network without fixing the host device's location (see col. 3, line 60 to col. 4, line 16).

Regarding claim 3, Nelson further discloses wherein the interface circuit further comprises a host interface module (see col. 4, lines 17-33).

Regarding claim 4, Nelson further discloses wherein the host interface module comprises one of: USB interface, an Ethernet interface, and an IEEE 1394 interface (see col. 3, lines 50-59, col. 4, lines 17-33).

Regarding claim 6, Nelson further discloses wherein the interface circuit further comprises a wireless data link layer module (see col. 4, lines 51-55).

Regarding claim 8, Nelson's single bus comprising a cable (see col. 4, lines 17-33), as illustrated in Fig. 2, shows the physical interface comprises a cable that permits the radio module to be optimally positioned within the wireless network.

Regarding claim 10, Nelson discloses a radio module for use with each device in a wireless network such that communication occurs between the wireless devices over the wireless network (see Figs. 1 and 2), wherein the radio module's performance depends on the radio module's module position within the wireless network (feature of antenna being at an optimum angle to allow optimization wireless transmission and reception, see col. 5, lines 34-49), the radio module comprising: an antenna module (205) that is an integral part of the radio module (200), an interface circuit (210, 220, 230 and 240), for logically connecting the antenna module with a host device (computer system 120) wherein the interface circuit includes a baseband module that demodulates and decodes signals received over the antenna module and that modulates and encodes signals transmitted through the antenna module (see col. 4, lines 51-55), a physical interface (100) for detachably connecting the radio module with the host device (see col. 4, lines 17-33), and a cable (see col. 3, lines 38-59), that supports the logical connection between the interface circuit and the host device through the physical interface, wherein the cable permits the radio module to be flexibly positioned within the wireless network without dictating the host device's location (see col. 3, line 60 to col. 4, line 16, col. 6, lines 15-40).

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Nelson (6,377,218)** in view of **Inkinen (5,809,115).**

Regarding claim 5, discloses a host interface for connection of the peripheral component to a host device (see Fig. 1), and that a computer system's functionality is dramatically enhanced by connecting it to a network, another computer or a device (see col. 1, lines 15-42), but fails to explicitly teach wherein the host interface module provides store and forward capabilities.

Inkinen discloses a terminal to be coupled to a telecommunications network using a removable radio module, wherein, a card interface structure of PCMCIA bus contains among other things, buffer memories to transmit digital data in both directions suggesting store and forward capabilities (see col. 7, lines 1-13)

It would have been obvious to one of ordinary skill in the art to provide Nelson's with an interface with buffering capabilities in order to exchange files and share information as taught by Inkinen.

6. Claims 2, 11, 14-18, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nelson et al (6,377,218)** in view of **Funk et al. (6,026,119)**.

Regarding claims 2 and 11, Nelson meets all limitations as applied to claims 1 and 10 above but fails to specifically teach wherein the radio module receives power

from a host device through the physical interface, wherein power to the radio module is supplied through the physical interface.

Funk discloses a wireless packet data communications modem, which can be used in conjunction with a computer to provide access to other computer users wherein the host device shares a power source with the communications modem and the power is supplied through an interface (see col. 3, lines 26-28, col. 4, line 64 to col. 5, line 7).

It would therefore have been obvious to one of ordinary skill in the art to combine the shared power source system of Funk with Nelson's peripheral component system as this would reduce circuit components in the radio module.

Regarding claims 14 and 15, Nelson meets all limitations as applied above to claim 10. Nelson further discloses wherein the radio module further comprises a processor, wherein the processor performs processing required by the interface circuit (see link controller 220 and micro controller 230, Fig 2), wherein processing not performed by the processor occurs on the host device (see col. 2, lines 44-53), but fails to explicitly teach the radio module having a memory.

Funk discloses a wireless packet data communications modem, which can be used in conjunction with a computer to provide access to other computer users wherein the radio module has a memory and processing capability (see EEPROM as illustrated in Fig. 4).

It would therefore have been obvious to one of ordinary skill in the art to provide the memory and processing capability of Funk's radio module to Nelson's peripheral component in order to ensure the capability of storing information required for

transmission and reception of data as well as the other information for the proper exchange of data with the wireless network.

Regarding claim 16, Nelson discloses a radio module that can be flexibly positioned within a wireless network to improve performance of the radio module, the performance of the radio module varying based on the position within the wireless network (feature of antenna being at an optimum angle to allow optimization wireless transmission and reception, see col. 5, lines 34-49), the radio module comprising: an antenna that is an integral part of the radio module including an antenna (205), an interface circuit (210, 220, 230 and 240), wherein the interface circuit includes a baseband module, a data link control module, and a physical layer module (see col. 4, lines 17-33, lines 51-55), a processor (link controller 220 and micro-controller 230), wherein the processor provides processing requirements for the interface circuit on the signals that are received and broadcast over the wireless network (see col. 4, lines 51-55), a protocol link (see col. 4, lines 61-66), and a physical interface including a cable that detachably connects with a host device (see col. 3, line 38 to col. 4, line 16), such that the radio module may be moved within the wireless network to improve antenna performance without changing the host device's location (antenna being at a substantially ninety degree angle after withdrawal to optimize wireless transmission and reception in the network, col. 5, lines 34-43). Nelson fails to explicitly teach the radio module having a memory.

Funk discloses a wireless packet data communications modem, which can be used in conjunction with a computer to provide access to other computer users

wherein the radio module has a memory and processing capability (see EEPROM as illustrated in Fig. 4, col. 3, lines 13-42, col. 5, lines 8-15).

It would therefore have been obvious to one of ordinary skill in the art to provide the memory and processing capability of Funk's radio module to Nelson's peripheral component in order to ensure the capability of storing information required for transmission and reception of data as well as the other information for the proper exchange of data with the wireless network.

Regarding claim 17, Nelson fails to specifically teach wherein the radio module receives power from a host device.

Funk discloses a wireless packet data communications modem, which can be used in conjunction with a computer to provide access to other computer users wherein the host device shares a power source with the communications modem (see col. 3, lines 26-28, col. 4, line 64 to col. 5, line 7).

It would therefore have been obvious to one of ordinary skill in the art to combine the shared power source system of Funk with Nelson's peripheral component system as this would reduce circuit components in the radio module.

Regarding claim 18, Nelson further discloses wherein the protocol link is one of IEEE 1394, and USB (see col. 4, lines 17-33).

Regarding claim 19, Nelson further discloses wherein the physical interface is one of an IEEE 1394 and USB (see col. 3, lines 50-59, col. 4, lines 17-33).

Regarding claim 20, Nelson's bus 100 as illustrated in Fig. 2, permits the radio module to be flexibly positioned with a wireless network.

7. Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nelson** as applied to claims 1 and 10 above, and further in view of **Ikegami (6,393,032)**.

Regarding claim 7, Nelson fails to teach a wireless media access control module.

In an analogous filed of endeavor, Ikegami discloses a wireless LAN system that includes a wireless terminal having a MAC for managing frame transmissions as well modem switching (see col. 8, lines 8-43 and Fig. 5).

It would therefore have been obvious to one of ordinary skill in the art to include a MAC module in Nelson's peripheral device in order to manage transmission of frames to and from the device including modem control as taught by Ikegami.

Regarding claims 12 and 13, Nelson further discloses wherein the interface circuit comprises one or more of: a host interface module that forms a logical interface between the host device and the radio module, a data link control interface that performs at least error control for the host device (see col. 4, lines 17-33), but fails to disclose a media access control module that manages a bi-directional bitstream between the host device and the antenna module.

In an analogous filed of endeavor, Ikegami discloses a wireless LAN system that includes a wireless terminal having a MAC for managing frame transmissions as well modem switching (see col. 8, lines 8-43 and Fig. 5).

It would therefore have been obvious to one of ordinary skill in the art to include a MAC module in Nelson's peripheral device in order to manage transmission of frames to and from the device including modem control as taught by Ikegami.

8. Claims 9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nelson** as applied to claims 1 and 10 above, and further in view of **Todd et al. (6,035,183).**

Regarding claim 9, Nelson fails to specifically disclose a user interface that indicates to a user when the radio module is optimally positioned within the wireless network, wherein the flexible cable permits the user to re-position the radio module within the wireless network until the user interface indicates that the radio module is optimally positioned.

Todd discloses a system and method for a fixed wireless access terminal to determine and display to a user signal quality information such that user can adjust the location of the access terminal for optimized signal reception (see col. 4, lines 18-67 and col. 5, lines 28-64).

It would therefore have been obvious to one of ordinary skill in the art to incorporate the link quality determination and indication feature of Todd into the system of Nelson in order to provide optimal signal quality indication for desired quality communications.

9. Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nelson and Funk et al** as applied to claim 20 above, and further in view of **Gendel et al. (6,127,936).**

Regarding claims 21 and 22 Nelson as modified by Funk fails to specifically teach a user interface that indicates when the radio module is optimally positioned within the wireless network wherein the user interface comprises LEDs

Gendel discloses an apparatus for providing a visual and/or audible indication of a quantity such as received signal strength to user (see col. 1, lines 38-63 and col. 4, lines 8-29), wherein the visual indicator may comprise a single LED (see col. 2, lines 15-17, lines 53-56 and col. 5, lines 12-45). According to Gendel, the system is very useful during installation to check the integrity of the system as well as finding the optimal location or point for best signal quality reception in a desired area (see col. 1, lines 28-35, col. 5, lines 46-54).

It would therefore have been obvious to one of ordinary skill in the art to incorporate the quality determination and indication feature of Gendel into the system of Nelson in order to provide signal quality indication for desired optimal location determination as taught by Gendel.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shimazaki (5,689,821) discloses an IC card radio modem including an antenna, which is controlled in response to the electric filed intensity of a receiving signal.

Nagata (6,628,966) discloses a packet communication card that enables power conservation in a portable digital telephone.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Appiah whose telephone number is 571 272-7904. The examiner can normally be reached on M-F 7:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on 571 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CA

CHARLES APPIAH
PRIMARY EXAMINER